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NPIC/R-301/63
December 1963

PHOTOGRAPHIC INTERPRETATION REPORT

COMPARISON OF SAM GUIDANCE RADARS AT OSTROV NARGIN, MYS SET-NAVOLOK, AND MOSCOW/FILI AIRFIELD, USSR

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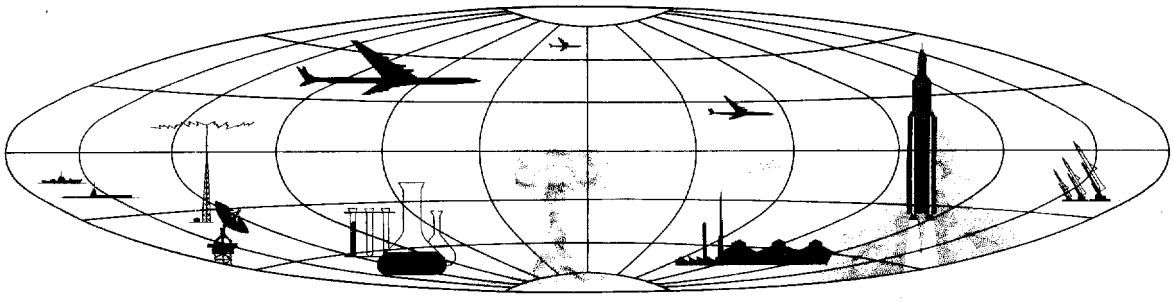
NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER



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COMPARISON OF SAM GUIDANCE RADARS AT OSTROV NARGIN, MYS SET-NAVOLOK, AND MOSCOW/FILI AIRFIELD, USSR

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PREFACE

This report has been prepared in answer to requirement DIA-AP1-63-89 requesting information concerning the dimensions and configurational characteristics of the surface-to-air missile (SAM) guidance radar associated with the SA-3 SAM system. In addition to the ground photography referenced in the requirement, available photography permitted analysis of radar components being assembled at the Moscow/Fili Airfield radar assembly area resembling those at Ostrov Nargin and Mys Set-Navolok.

CONCLUSIONS

There are overall similarities in certain components of the guidance radars at Ostrov Nargin, Mys Set-Navolok, and the Moscow/Fili Airfield radar assembly area (Table 1). A total of nine different components are visible at the three sites. Two of these--a trough and a cut paraboloid--are present at each site. Other components visible at Mys Set-Navolok include a peel with feed, an unidentified object, a single circular section, and a stacked circular section. The latter two components are also visible at Ostrov Nargin, but not at the Moscow/Fili Airfield radar assembly area.

It cannot be determined whether configurational differences in the guidance radars are due to the poor quality of the available photography or to actual differences in design. The photography is of sufficient quality to determine that the radars are not of the FAN SONG type.

Table 1. Comparison of Guidance Radar Components

Item (Figs 5 & 10)	Component	Ostrov Nargin	Mys Set-Navolok	Moscow/Fili Airfield
A	Trough	Present	Present	Present
B	Cut paraboloid section	Present	Present	Present
C	Cut cylindrical section	Present	Not visible	Present
D	Peel	Not visible	Present	Present
E	Feed	Not visible	Present	Not visible
F	Single circular section	Not visible	Present	Not visible
G	Stacked circular section	Present	Present	Not visible
H	Unidentified object	Not visible	Present	Not visible
I	Back-to-back circular section	Present	Not visible	Not visible

INTRODUCTION

A complete photographic interpretation was made to determine whether there is a correlation between guidance radar components visible at the SA-3 site at Ostrov Nargin (BE [redacted] the SAM site at Mys Set-Navolok, and the radar assembly area at Moscow/Fili Airfield.

The SA-3 guidance radar at Ostrov Nargin (40-17-45N 49-54-30E) was covered on KEY-HOLE [redacted]

25X1D

25X1A

25X1D 25X1D

[redacted] and on ground photography of [redacted] The SAM site guidance radar at Mys Set-Navolok (69-25-50N 33-29-00E) was covered on KEYHOLE photography of [redacted] and on ground photography of [redacted] The Moscow/Fili Airfield radar assembly area (55-46-36N 37-29-26E) was covered on ground photography of [redacted]

25X1D
25X1D
25X1D
25X1D

Due to the poor quality, lack of pertinent camera data, and extreme horizontal distances of the photography of Ostrov Nargin and Mys Set-Navolok, no measurements could be obtained for the guidance radars there. No apparent evidence exists on available KEYHOLE or ground photography to indicate any relationship between the SA-2 and the SA-3 SAM sites at Ostrov Nargin. This is also true of the Mys Set-Navolok SAM area. Radar units located within 1,000 feet of the SA-3 site at Ostrov Nargin include a FLAT FACE, a KNIFE REST B, and a FISH NET IFF. There is no additional radar within 1,000 feet of the Mys Set-Navolok SAM site; however, a FLAT FACE radar located 8,500 feet southwest of the site is connected to the SAM guidance radar by a possible cable scar.

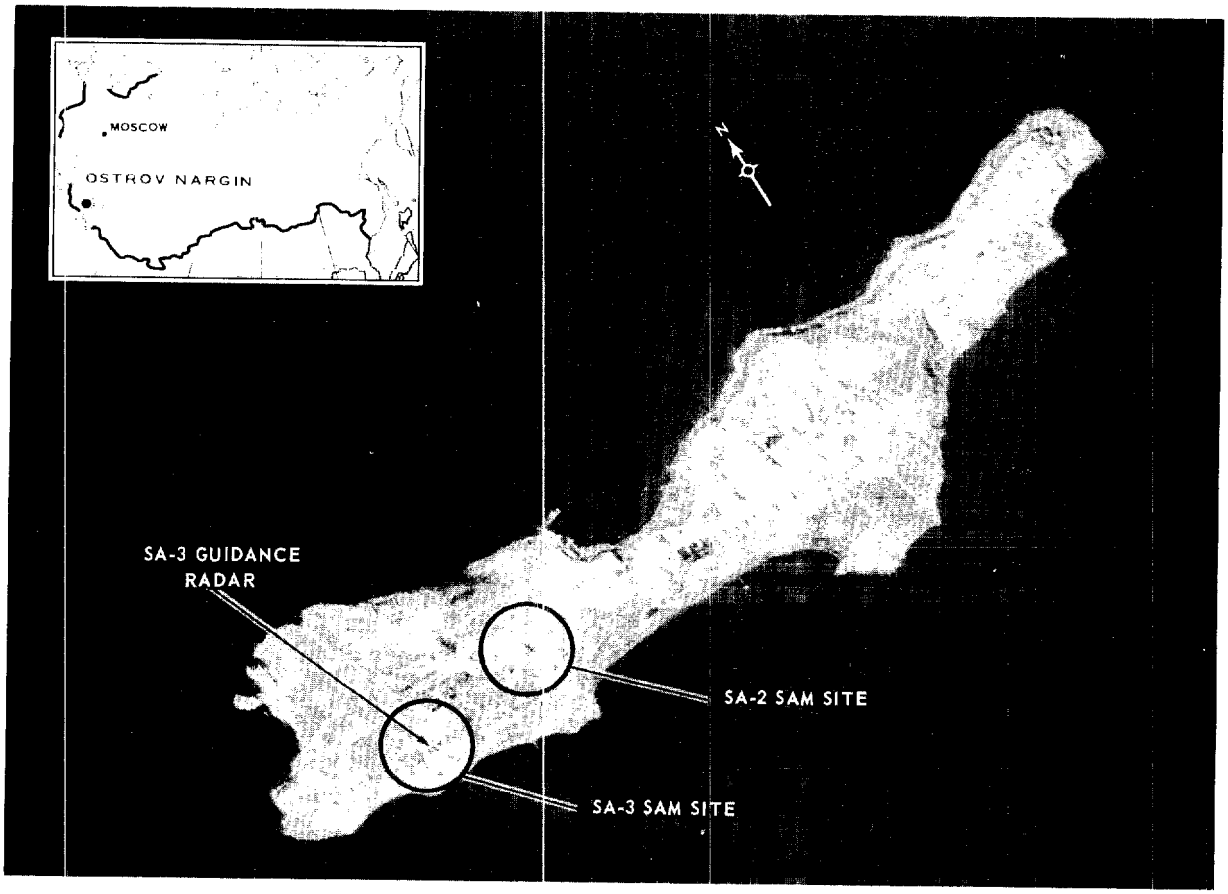

FIGURE 1. SA-3 GUIDANCE RADAR, OSTROV NARGIN, [redacted]

OSTROV NARGIN

The SA-3 guidance radar at Ostrov Nargin (Figures 1-4) consists of five different components mounted on a chassis, as illustrated in Figure 5. The back-to-back circular section (Figure 5, item I) is attached to the rear of the chassis by a lattice-type mast and may have the capability of being raised or lowered. A cut cylindrical section (item C) is mounted on top of the chassis and appears to have the capability to revolve. Two cut paraboloids (item B), one with a feed and one without, are located on top of the chassis over two troughs (item A). One trough is horizontal and parallel to the front of the chassis; the other is also horizontal, but attached to the side of the chassis. At the base of the chassis, under the latter trough, is a stacked circular section (item G).

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FIGURE 3. SA-3 GUIDANCE RADAR, OSTROV NARGIN, AS SEEN FROM SOUTHWEST END OF ISLAND, [redacted]

25X1D

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FIGURE 2. CANVAS-COVERED SA-3 GUIDANCE RADAR, OSTROV NARGIN, AS SEEN FROM WEST END OF ISLAND, [redacted]

25X1D

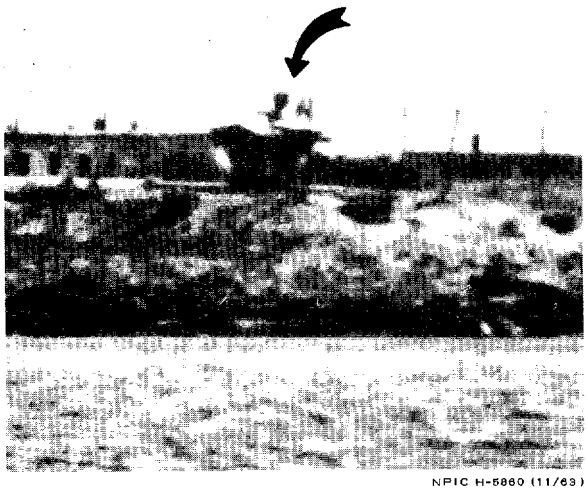

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FIGURE 4. SA-3 GUIDANCE RADAR, OSTROV NARGIN, AS SEEN FROM SOUTH SIDE OF ISLAND, [redacted]

25X1D

25X1D

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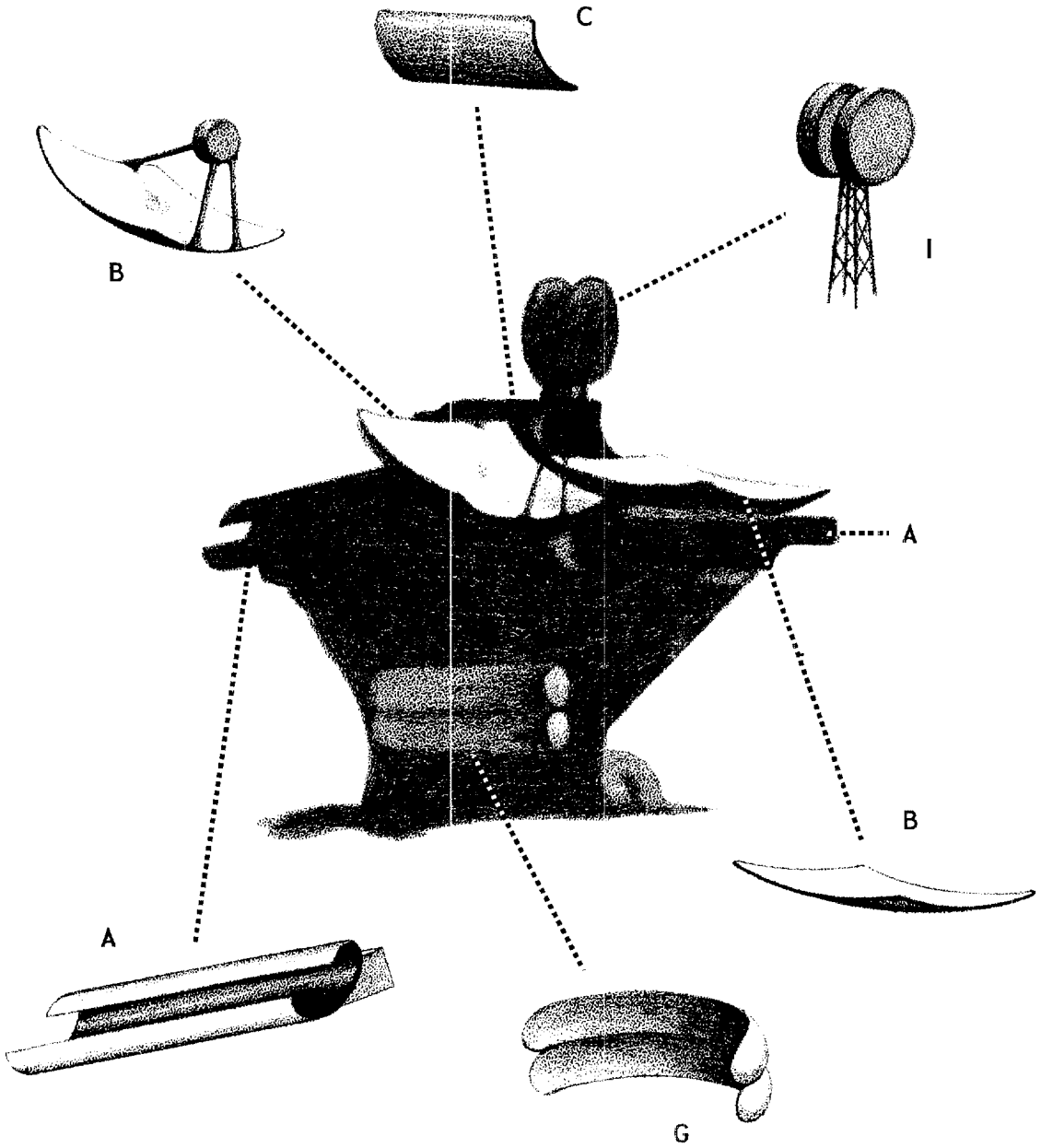

FIGURE 5. CONCEPT OF GUIDANCE RADAR COMPONENTS, OSTROV NARGIN, OBSERVED ON [redacted] PHOTOGRAPHY.

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MYS SET-NAVOLOK

The SAM guidance radar at Mys Set-Navolok (Figures 6-9) consists of seven different components mounted on a heavy lattice mast, as illustrated in Figure 10. A chassis mounted on top of the mast holds four of the components (Figure 10, items A, B, D, and H). An unidentified component (item H) with a small feed is mounted topmost on the chassis. Below this component is a cut paraboloid (item B) attached to the chassis just above a trough

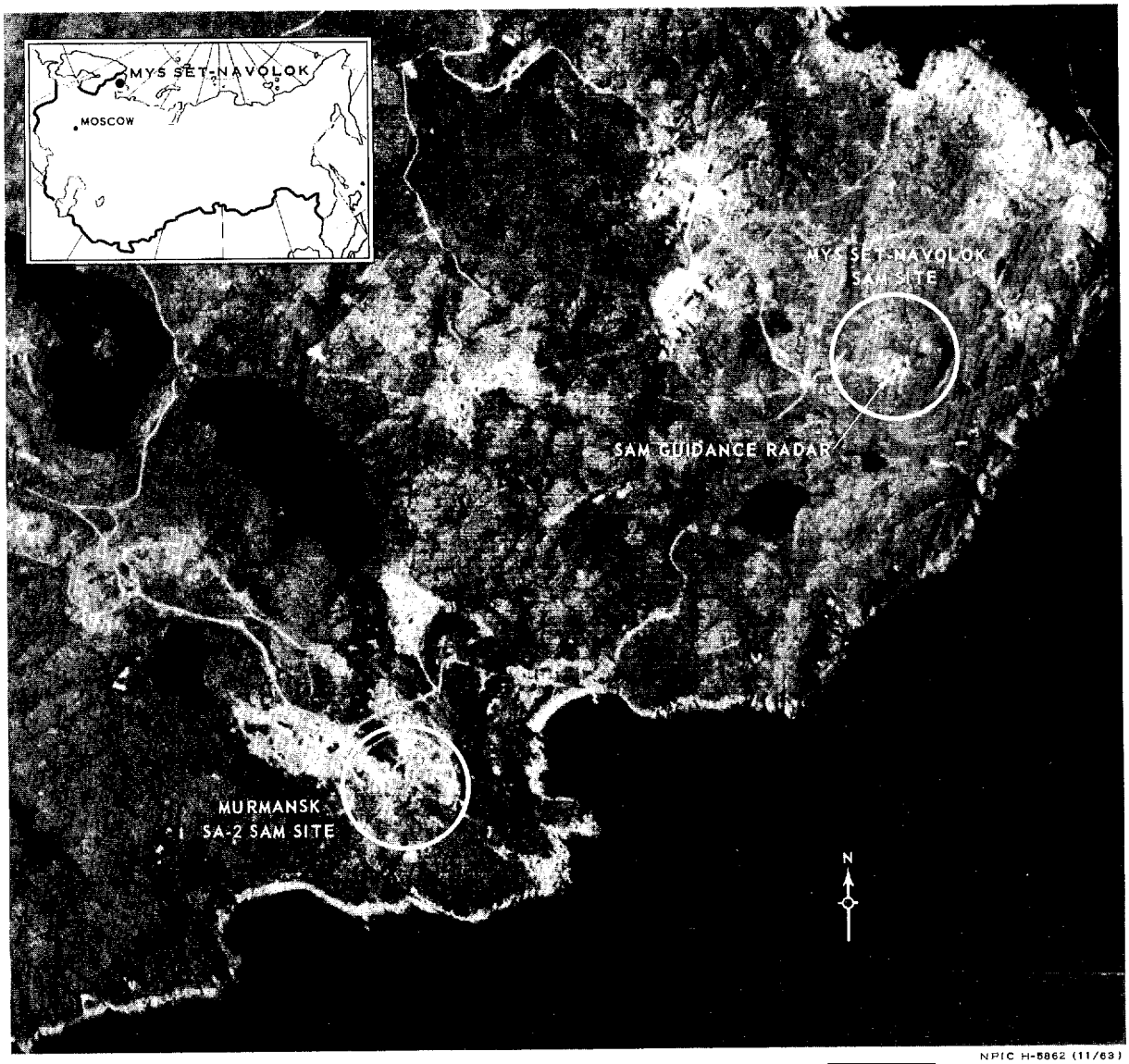

FIGURE 6. LOCATION OF SAM GUIDANCE RADAR, MYS SET-NAVOLOK, [redacted]

25X1D

25X1D

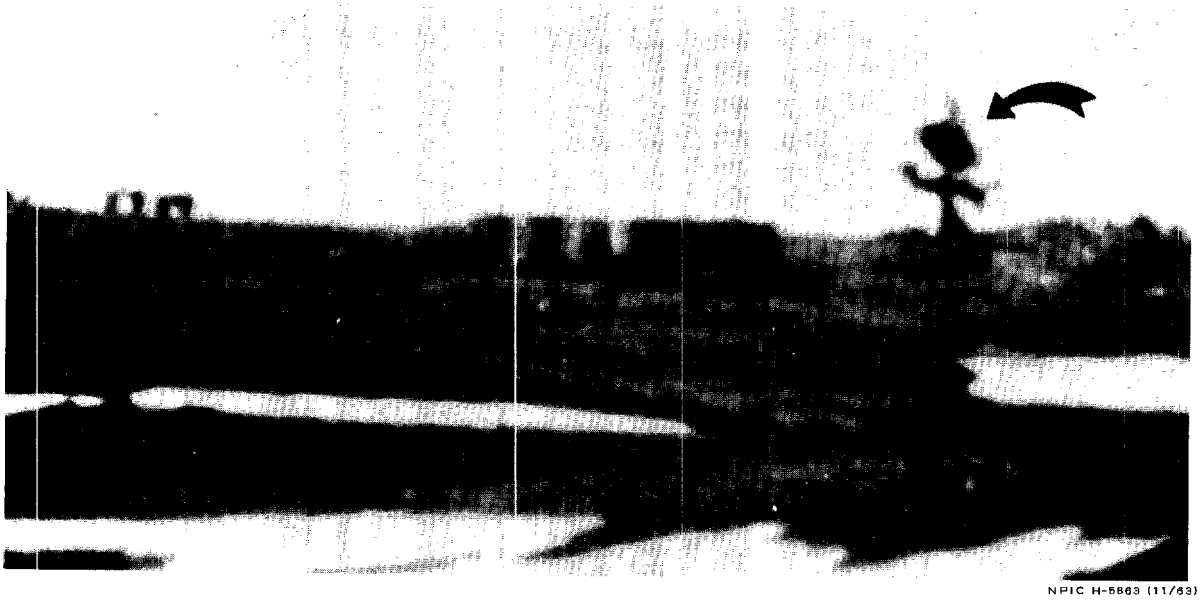

FIGURE 7. SAM GUIDANCE RADAR, MYS SET-NAVOLOK, [redacted] 25X1D

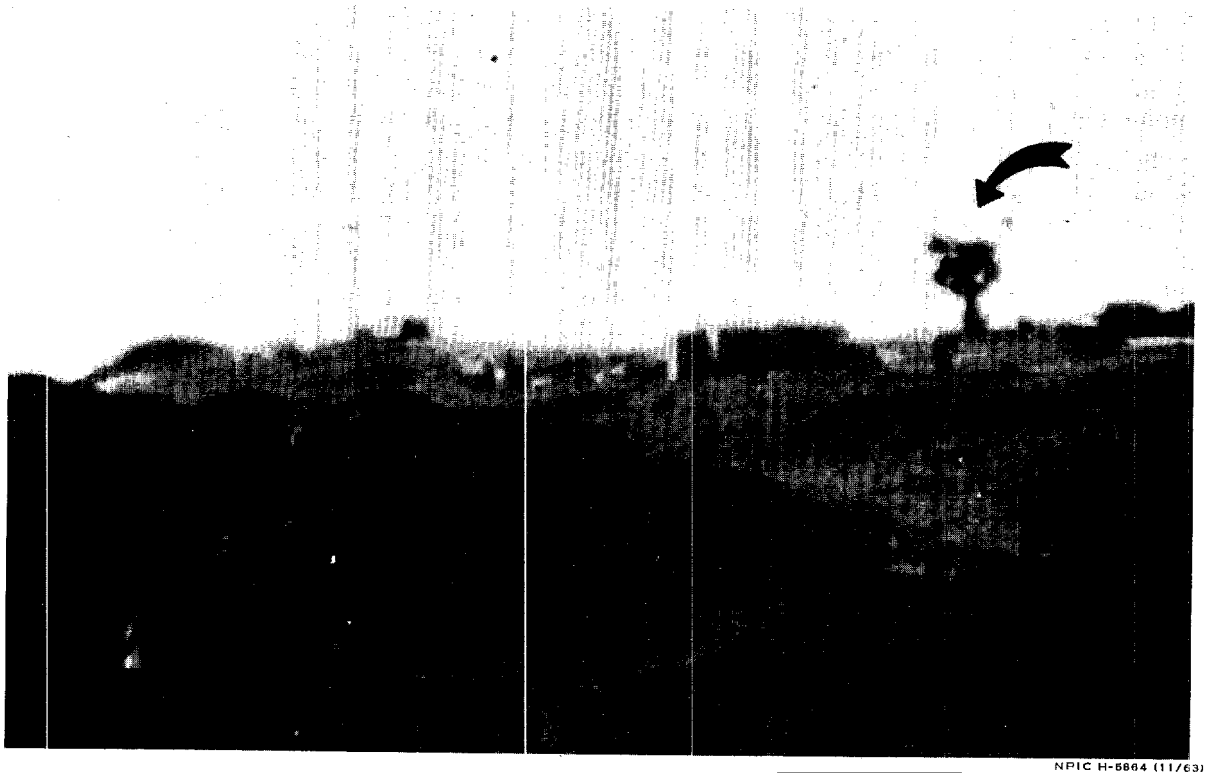

FIGURE 8. SAM GUIDANCE RADAR, MYS SET-NAVOLOK, [redacted]

25X1D

(item A), which is horizontal and mounted on the chassis in a manner similar to that of the side-mounted trough at Ostrov Nargin. Another trough (item A) appears to be located on the other side of the chassis and slanted at a 45-degree angle to the ground. A peel (item D) is situated on the far side of the chassis. Halfway up the mast that holds the chassis are two lattice-type arms. At the end of one arm is a single circular section-type component (item F), and at the end of the other arm is a stacked circular section-type component (item G). An independently mounted feed (item E) is attached to the mast above the two lattice-type arms. This feed may have the capability of being raised and lowered.

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FIGURE 9. SAM GUIDANCE RADAR, MYS SET-NAVOLOK, [redacted]

25X1D

MOSCOW/FILI AIRFIELD RADAR ASSEMBLY AREA

The four different guidance radar components at the Moscow/Fili Airfield radar assembly area are mounted on two different chassis, which are in the process of being assembled (Figures 11 and 12). Two troughs (Figure 5, item A) are visible mounted on one chassis, and a cut paraboloid (item B) can be seen mounted on the second chassis. A cut cylindrical section (item C) is on the ground between the two chassis. To the right of the second chassis a canvas-covered peel (item D) is lying on the ground. The troughs measure [redacted] feet in length, the cut paraboloid [redacted] feet in width and [redacted] feet in chord, and the cut cylindrical section [redacted] feet in length.

25X1D
25X1D
25X1D
25X1D

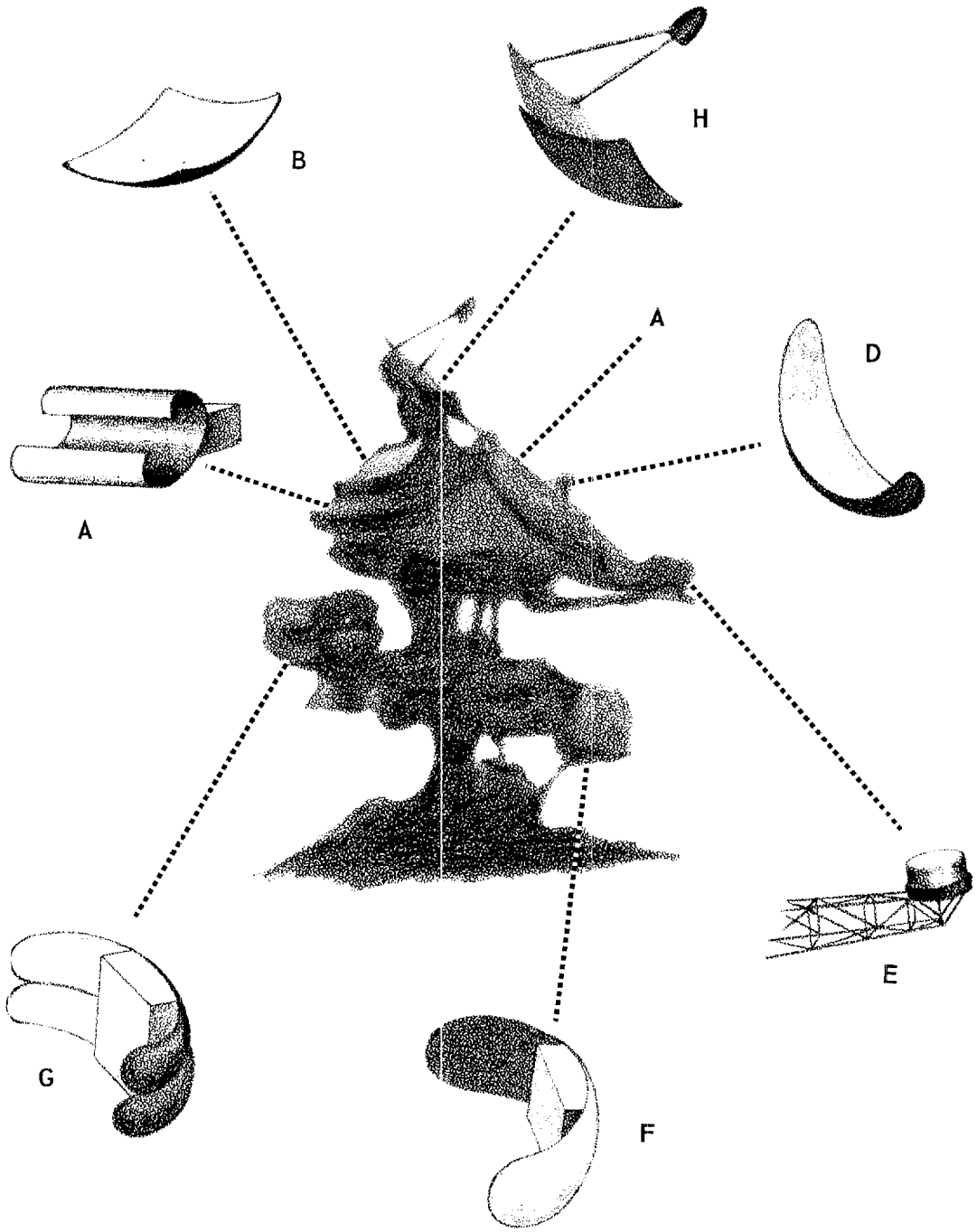

FIGURE 10. CONCEPT OF GUIDANCE RADAR COMPONENTS, MYS SET-NAVOLOK, OBSERVED ON [redacted] PHOTOGRAPHY.

NPIC H-5866 (11/63)

25X1D

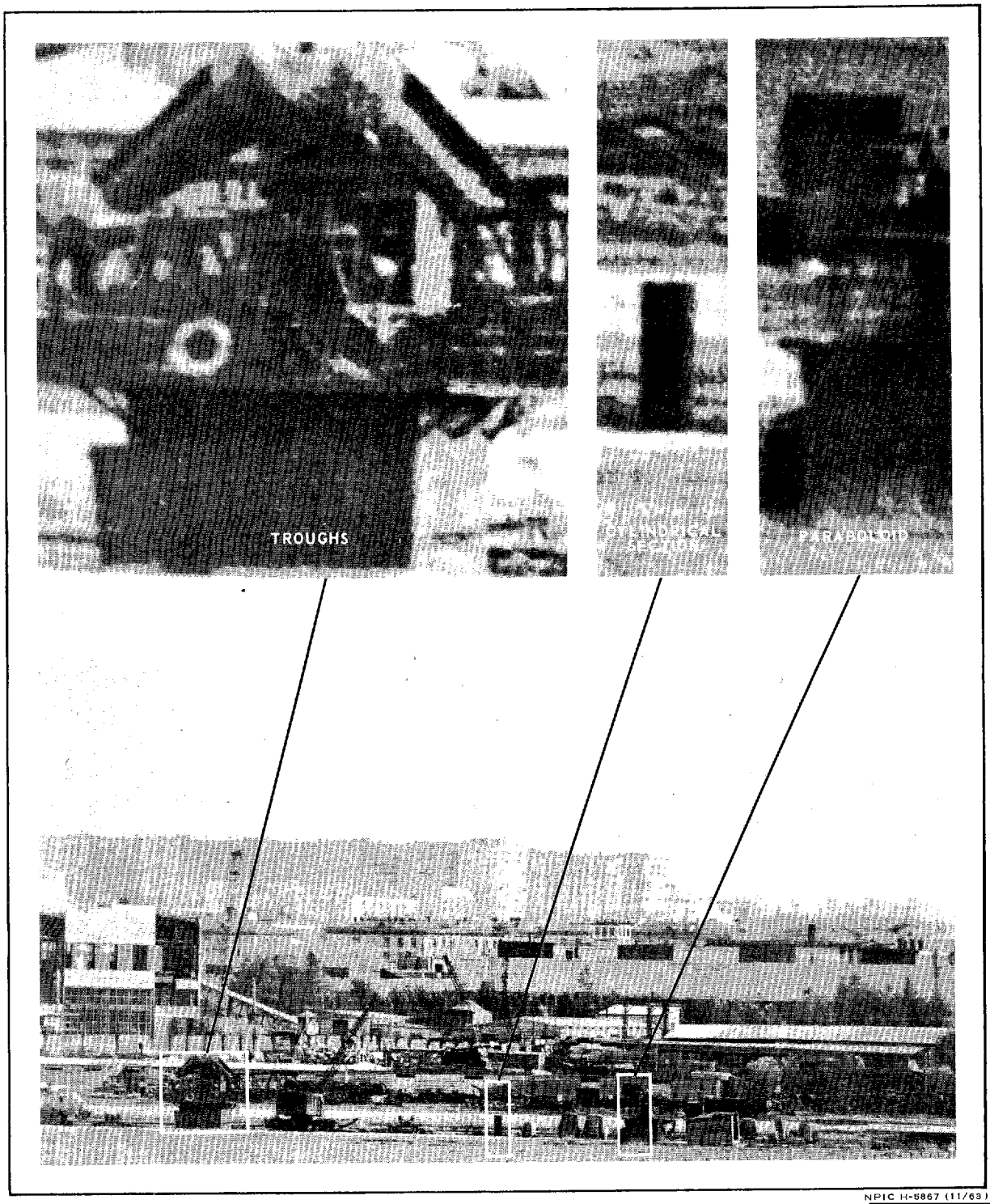

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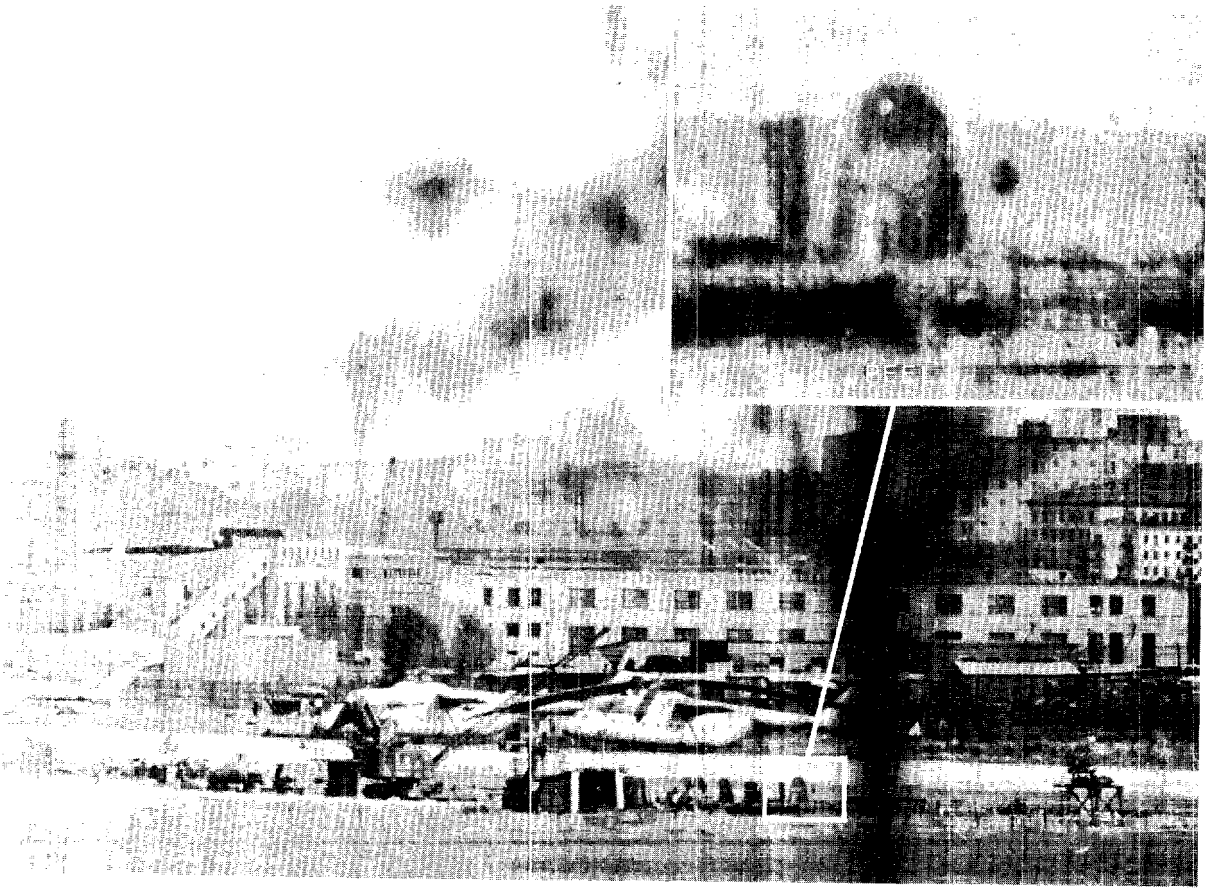
FIGURE 11. GUIDANCE RADAR COMPONENTS OBSERVED AT MOSCOW/FILI AIRFIELD RADAR ASSEMBLY AREA, [redacted]

25X1D



NPIC H-5868 (11/63)

FIGURE 12. PEEL-TYPE REFLECTOR OBSERVED AT MOSCOW/FILI AIRFIELD RADAR ASSEMBLY AREA, [redacted]

25X1D

REFERENCES

25X1D

PHOTOGRAPHY

Mission	Date	Pass	Camera	Frames	Classification
[redacted]					TOP SECRET RUFF
					TOP SECRET RUFF

Ground Photography

Agency	Accession No	Date	Classification
Ostrov Nargin			
DIA	5901005463,	6 Apr 63	SECRET
25X1C [redacted]			
CIA	540278	14 Oct 62	SECRET
Mys Set-Navolok			
CIA	899527 to 899532	Sep 62	SECRET/No Foreign Dissem
CIA	900157 to 900159	Jul 62	SECRET/No Foreign Dissem
CIA	850796 to 850797	May 62	SECRET/No Foreign Dissem
CIA	924917 to 924949	May 63	SECRET/No Foreign Dissem
CIA	939718 to 939719	Aug 63	SECRET/No Foreign Dissem
Moscow/Fili Airfield			
[redacted]			SECRET

REQUIREMENT

DIA-AP1-63-89 25X1C

NPIC PROJECT

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